

WEST

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L5: Entry 154 of 160

File: JPAB

Sep 22, 1998

PUB-NO: JP410249356A  
DOCUMENT-IDENTIFIER: JP 10249356 A  
TITLE: HOT WATER CIRCULATOR

PUBN-DATE: September 22, 1998

## INVENTOR-INFORMATION:

NAME	COUNTRY
ISHINO, YUICHI	

## ASSIGNEE-INFORMATION:

NAME	COUNTRY
BRIDGESTONE CORP	

APPL-NO: JP09081839

APPL-DATE: March 13, 1997

INT-CL (IPC): C02 F 1/50; A47 K 3/00; B01 D 35/027; C02 F 1/32; C02 F 1/72; C02 F 1/78

## ABSTRACT:

PROBLEM TO BE SOLVED: To improve the sterilization effect to the saprophytic bacteria in bath water by providing the bath water circulator with an ozone generator, a UV lamp for generating UV rays of a specific quantity of wavelength and a UV lamp for generating UV rays of a wavelength different from the wavelength as a sterilizing device for sterilizing the bacteria in the water./

SOLUTION: This hot water circulator 10 to be installed in a bathtub 1 is provided with its water intake section 11 and discharge section 12 within the bath water in the bathtub 1 and is constituted by successively connecting a pump 13, a purifying cylinder 14, the ozone generator 15, the UV lamps 16, 17 and a heater 18. At this time, the ozone generated by the ozone generator 15 dissolves into the circulating water. The UV rays of 200 to 300nm are generated by, for example, a low-pressure mercury lamp in the UV lamp 16 and the dissolved ozone is irradiated with these UV rays. Next, the UV rays of 300 to 420nm are generated by, for example, a black light in the UV lamp 17 and further, the dissolved ozone is irradiated with these UV rays. As a result, the ozone dissolved in the circulating water is efficiently activated and the sterilizing power is intensified.

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08/17/98

heater

Cite

# WEST Search History

DATE: Wednesday, August 13, 2003

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side		result set	
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=AND</i>			
L16	(titanium adj \$3oxide) near7 orthorhombic	6	L16
L15	L13 not L5	201	L15
L14	L13 and orthorhombic	0	L14
L13	L9 and L10 and L11	212	L13
L12	L9 and L10 nad L11	1	L12
L11	(UV or ultraviolet) near30 (area or tank or room or cell or compartment or section or reactor or zone or part or portion) near30 (long\$10 or 300 or ground or base)	5356	L11
L10	(UV or ultraviolet) near30 (area or tank or room or cell or compartment or section or reactor or zone or part or portion) near30 (medium\$10 or 300 or (activ\$6 adj oxygen))	2601	L10
L9	(UV or ultraviolet) near30 (area or tank or room or cell or compartment or section or reactor or zone or part or portion) near30 (short\$10 or 200 or ozone or "O.sub.3.")	3953	L9
L8	(UV or ultraviolet) near30 (area or tank or room or cell or compartment or section or reactor or zone or part or portion) near30 (medium or 300 or (activ\$6 adj oxygen))	2816	L8
L7	(UV or ultraviolet) near30 (area or tank or room or cell or compartment or section or reactor or zone or part or portion) near30 (short or 200 or ozone or "O.sub.3.")	3509	L7
L6	L5 and orthorhombic	0	L6
L5	L1 and L2 and L3 and L4	160	L5
L4	(UV or ultraviolet) near8 (long or 300)	14914	L4
L3	(UV or ultraviolet) near8 (medium or 300)	14095	L3
L2	(UV or ultraviolet) near8 (short or 200)	14683	L2
L1	(UV or ultraviolet) near8 ("O.sub.3" or ozone)	7765	L1

END OF SEARCH HISTORY

WEST

End of Result Set

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L2: Entry 2 of 2

File: DWPI

Nov 16, 1990

DERWENT-ACC-NO: 1991-003704

DERWENT-WEEK: 199101

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TITLE: Deodorisation by photocatalyst, of e.g. food smell in home - semiconductor catalyst e.g. tungsten oxide, is irradiated with UV of specified wavelength and intensity

PATENT-ASSIGNEE:

ASSIGNEE CODE  
MATSUSHITA ELEC IND CO LTD MATSU

PRIORITY-DATA: 1989JP-0100719 (April 20, 1989)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>JP 02280818 A</u>	November 16, 1990		000	
JP 94007906 B2	February 2, 1994		000	B01D053/36

#### APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	descriptor
JP 02280818A	April 20, 1989	1989JP-0100719	
JP 94007906B2	April 20, 1989	1989JP-0100719	
JP 94007906B2		JP 2280818	Based on

INT-CL (IPC): A61L 9/00; B01D 53/34; B01D 53/36

ABSTRACTED-PUB-NO: JP 02280818A

**ABSTRACTED FOR**  
**BASIC-ABSTRACT:**

Odorous components in the atmos. are decomposed by irradiating the semiconductor catalyst with ultraviolet ray having wavelength of 250 nm and an intensity of 2.0 mW/cm<sup>2</sup>.

Semiconductor catalyst is pref. e.g. tungsten oxide, titanium oxide, yttrium oxide, tin oxide

USE/ADVANTAGE - The method is used for deodorisation in homes and offices (cooking, foods, toilet, smoking). Good efficiency of deodorisation and prevention of catalyst deterioration can be achieved, so a long life of catalytic activity can be maintained.

CHOOSEN-DRAWING: Dwg. 0/3

TITLE-TERMS: DEODORISE PHOTOCATALYST FOOD SMELL HOME SEMICONDUCTOR CATALYST TUNGSTEN OXIDE IRRADIATE ULTRAVIOLET SPECIFIED WAVELENGTH INTENSITY

DERWENT-CLASS: D22, T01, P34

=> s jp02280818/pn  
L4 1 JP02280818/PN

=> d all

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1991:170404 CAPLUS  
DN 114:170404  
TI Deodorization of indoor air using photolysis catalysts  
IN Ikeda, Tomoko; Tokumitsu, Shuzo  
PA Matsushita Electric Industrial Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM B01D053-36  
ICS A61L009-00; B01D053-34  
CC 59-6 (Air Pollution and Industrial Hygiene)  
Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02280818	A2	19901116	JP 1989-100719	19890420 <--
	JP 06007906	B4	19940202		
PRAI	JP 1989-100719		19890420		

AB Odorous air from toilets, closed rooms, refrigerators, pet manure or sewage effluents is treated by contacting with a photolysis catalyst under

UV irradn. (wavelength 250 nm, strength  $\geq 2.0 \text{ mW/cm}^2$ ) to decomp. odorous components. The photolysis catalyst is a W oxide/Ti oxide/Y oxide/Sn oxide semiconductor rod.

ST deodorization air UV photolysis catalyst; tungsten oxide semiconductor photolysis catalyst

IT Photolysis catalysts

(tungsten oxide-titanium oxide-yttrium oxide-tin oxide semiconductor rods, for deodorization of indoor air)

IT Air conditioning

(deodorization, in closed rooms or toilets, photolysis catalysts for)

IT 1314-35-8, Tungsten oxide, uses and miscellaneous 1314-36-9, Yttrium oxide, uses and miscellaneous 1332-29-2, Tin oxide 13463-67-7, Titanium oxide, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)

(catalysts contg., semiconductor rods, for photolysis, for deodorization of indoor air)

IT 74-93-1, Methyl mercaptan, uses and miscellaneous 75-07-0,

Acetaldehyde,

uses and miscellaneous 7664-41-7, Ammonia, uses and miscellaneous 7783-06-4, Hydrogen sulfide, uses and miscellaneous

RL: REM (Removal or disposal); PROC (Process)

(removal of, from odorous air, photolysis catalysts for)

=>

=> s jp10155887/pn  
L5 1 JP10155887/PN

=> d all

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1998:388896 CAPLUS  
DN 129:44528  
TI Method and apparatus of sterilization and purification of air and water  
IN Mochima, Tadashi  
PA Michima, Tadashi, Japan; Makisa, Yoshiyuki  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM A61L009-015  
ICS A61L009-20; C01B013-10; C02F001-32; C02F001-50; C02F001-72;  
C02F001-78  
CC 59-4 (Air Pollution and Industrial Hygiene)  
Section cross-reference(s): 61

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10155887	A2	19980616	JP 1996-317552	19961128 <--
PRAI	JP 1996-317552		19961128		

AB Air is sterilized and purified by allowing O<sub>3</sub> to be included and then irradiating UV of 300-420 nm. App. for the sterilization and purifn. of air is equipped with a duct-like casing, an UV lamp for irradiating UV of wave length 180-200, 200-300, and 300-420 nm, whereas air is fluidized from the 180-200 nm UV lamp to the 300-420 nm UV lamp side. Water is sterilized and purified by introducing O<sub>3</sub>-contg. air to form numerous minute air bubbles contg. O<sub>3</sub>, and successively irradiating UV of 200-300 nm and UV of 300-420 nm. App. for the sterilization and purifn. of water is equipped with first UV-irradiating cylinder for irradiating UV of 180-200 nm to air for generating O<sub>3</sub>-contg. air, a pump for mixing and stirring the O<sub>3</sub>-contg. air with water to be treated, and second and third UV-irradiating cylinders for irradiating UV of 200-300 nm and of 300-420 nm, resp. to the water/air bubble mixts. The 200-300 nm UV converts O<sub>3</sub>

to active O atoms, active O<sub>2</sub>, and superoxide, while the 300-420 nm UV converts the active O<sub>2</sub> and superoxide to O<sub>2</sub> at ground state, and high transition energy generated in the reaction is used for sterilizing the air and the water sterilization is carried out by reaction of active O atom with H<sub>2</sub>O for generating free OH radicals.

ST air sterilization ozone UV radiation; superoxide generation sterilization air water; water sterilization ozone UV radiation; active oxygen generation sterilization water air

IT Sterilization and Disinfection  
(air and water; method and app. of sterilization and purifn. of air and

water by irradiating UV to O<sub>3</sub> for generating superoxide and active O mols. and atoms)

IT Water purification  
(disinfection; method and app. of sterilization and purifn. of air and water by irradiating UV to O<sub>3</sub> for generating superoxide and active O mols. and atoms)

IT Air purification  
(sterilization; method and app. of sterilization and purifn. of air and

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## End of Result Set

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L1: Entry 2 of 2

File: DWPI

Jun 16, 1998

DERWENT-ACC-NO: 1998-391399

DERWENT-WEEK: 199834

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**TITLE:** Sterilisation and purification of air and water - by irradiation of ozone containing air with UV of different wavelengths

**PATENT-ASSIGNEE:**

ASSIGNEE	CODE
MAKISE Y	MAKII
MOCHIKI T	MOCHI

**PRIORITY-DATA:** 1996JP-0317552 (November 28, 1996)

**PATENT-FAMILY:**

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>JP 10155887 A</u>	June 16, 1998		007	A61L009/015

**APPLICATION-DATA:**

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP 10155887A	November 28, 1996	1996JP-0317552	

**INT-CL (IPC):** A61 L 9/015; A61 L 9/20; C01 B 13/10; C02 F 1/32; C02 F 1/50; C02 F 1/72; C02 F 1/78

**ABSTRACTED-PUB-NO:** JP 10155887A

**BASIC-ABSTRACT:**

Sterilisation and purificn. of air is characterised by irradiating ozone-contg. air with ultraviolet rays with wavelengths of 200-300 nm and then with ultraviolet rays with wavelengths of 300-420 nm. Also claimed is sterilisation and purificn. of water, which is achieved by introducing ozone-contg. air into water to be treated to form many fine bubbles of ozone-contg. air in the water and irradiating the water contg. fine bubbles with ultraviolet rays with wavelengths of 200-300 nm and then with ultraviolet rays with wavelengths of 300-420 nm.

**USE** - The sterilised water can be used in fish farming and food processing.

**ADVANTAGE** - Infection within hospitals and infection through air conditioning can be prevented by the sterilisation and purification of air.

**CHOSEN-DRAWING:** Dwg. 0/2

**TITLE-TERMS:** STERILE PURIFICATION AIR WATER IRRADIATE OZONE CONTAIN AIR ULTRAVIOLET WAVELENGTH

**DERWENT-CLASS:** D15 D22 E36 J01 P34

**CPI-CODES:** D04-A01K; D04-A02; D09-B; E31-D03; J01-D02;

water by irradiating UV to O<sub>3</sub> for generating superoxide and active O mols. and atoms)

IT 7782-44-7P, Oxygen, biological studies 17778-80-2P, Oxygen atom, biological studies  
RL: BAC (Biological activity or effector, except adverse); BSU  
(Biological study, unclassified); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation)  
(active; method and app. of sterilization and purifn. of air and water by irradiating UV to O<sub>3</sub> for generating superoxide and active O mols. and atoms)

IT 11062-77-4P, Superoxide  
RL: BAC (Biological activity or effector, except adverse); BSU  
(Biological study, unclassified); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation)  
(method and app. of sterilization and purifn. of air and water by irradiating UV to O<sub>3</sub> for generating superoxide and active O mols. and atoms)

IT 10028-15-6P, Ozone, processes  
RL: BAC (Biological activity or effector, except adverse); BSU  
(Biological study, unclassified); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); BIOL (Biological study); PREP (Preparation); PROC (Process)  
(method and app. of sterilization and purifn. of air and water by irradiating UV to O<sub>3</sub> for generating superoxide and active O mols. and atoms)

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